

PROCEEDINGS
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DESCRIPTIONS OF NEW SQUIRRELS FROM MEXICO
AND CENTRAL AMERICA.

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During explorations made in Mexico and parts of Central America for the Biological Survey, U. S. Department of Agriculture, an extraordinarily fine series of squirrels has been secured. The collection contains topotypes of all but two or three of the large number of species described from Mexico, besides specimens from scores of widely scattered localities. After my return from the field a few months ago, Dr. C. Hart Merriam, Chief of the Biological Survey, who had already done some work on the group, generously placed this rich material in my hands for elaboration. In order that I might cover the ground more satisfactorily, Mr. F. W. True, Executive Curator of the U. S. National Museum, placed the entire Museum series of tropical American Squirrels at my disposal, and Dr. J. A. Allen, Curator of Mammals in the American Museum of Natural History, New York, loaned me the series in the collection under his charge. Without the material furnished by Dr. Allen and Mr. True I could not have reached satisfactory conclusions concerning the Central American species, and I wish to express my appreciation of their kindness.

I am also under special obligations to Mr. Oldfield Thomas, Curator of Mammals in the British Museum, for his courtesy in comparing specimens in our collection with type specimens in the British Museum, thus identifying Gray's numerous names with forms from known localities, and furnishing a safe basis for future work.

Revisers of tropical American Squirrels have hitherto worked at great disadvantage, owing to scanty and unsatisfactory material. The collections studied in the present connection contain over six hundred and fifty specimens from Mexico and Central America, besides many from the United States and South America. The large number of topotypes in these collections, together with my personal knowledge of the geographical features of the area covered, have rendered it a comparatively simple matter to disentangle the complications of synonymy that have puzzled former workers. It was a surprise to find that while many of the old names apply to perfectly valid species or subspecies, a considerable number of forms remain to be described. As it will be some time before my revision of the group can be published, it seems advisable to describe the new species and subspecies in this preliminary paper.

***Sciurus richmondi* sp. nov.** Richmond's Squirrel.

Type from Escondido River, Nicaragua. No. $\frac{364}{88} \frac{81}{51}$, ♀ ad., U. S. Nat. Mus., Biological Survey Coll. Collected October 4, 1892, by Chas. W. Richmond. Orig. No. 118.

Distribution.—Bluefields and Escondido River region.

Characters.—A small squirrel resembling *S. aestuans*, but back darker brown, lower surface richer, more reddish-fulvous; tail narrow, black, thinly washed with dull fulvous. 1 upper premolar.

Color.—Upper parts from nose to base of tail, including upper surface of fore and hind feet, finely grizzled black and dark fulvous, the fulvous brightest and inclining to rusty on sides of neck and thighs; eyes surrounded by a dull fulvous ring; cheeks dingy grizzled-fulvous, paler than top of head; a small patch of dull fulvous fur behind base of ears. Under parts varying from dingy fulvous to bright reddish-buffy, usually brightest on neck and breast. Anal region and base of tail all round like back; rest of upper surface of tail black, thinly washed with dingy fulvous; under side of tail with a median band of grizzled black and dull rufous, bordered by a blackish band and edged with fulvous.

Measurements.—Type specimen: Total length 384; tail vertebræ 181; hind foot 53.5. Average of 5 adults: Total length 368.6; tail vertebræ 178; hind foot 50.3.

Remarks.—In summer pelage the lower surface is deeper colored than in winter, but there appears to be no other seasonal difference. Individual variation is not marked; the intensity of the fulvous above and below varies from a dingy to a bright reddish-buffy, and there is no trace of whitish or gray on any of the twenty specimens examined. The upper surfaces of the feet are sometimes like the back and sometimes a little brighter fulvous; the ears are scantily covered with short dark hairs.

S. richmondi has a superficial resemblance to *S. deppei*, but is darker and the gray is replaced by fulvous or reddish-buffy.

From *S. æstuans hoffmanni*, to which it is most closely related, it may be readily distinguished by the paler under surface, and especially by the dull fulvous wash, instead of the rich bright rufous on the tail. The general color of dorsal surface is much the same in both, and in intensity of lower surface *richmondi* sometimes approaches closely to *hoffmanni*. The difference between the color edging the tail appears to be constant. So far this species is known only from the lower Escondido River, above Bluefields, Nicaragua, but it undoubtedly has a much wider range. It is probable that when the intermediate country between the known ranges of *S. richmondi* and *S. æstuans hoffmanni* is worked they will be found to intergrade, in which case *S. richmondi* will become a subspecies of *S. æstuans*. This squirrel is named in honor of Dr. Chas. W. Richmond, Assistant Curator of Birds in the U. S. National Museum, who collected the series upon which the description is based.

***Sciurus negligens* sp. nov.** Tampico Squirrel.

Type from Alta Mira, Tamaulipas, Mexico. No. 93028, ♀ ad., U. S. Nat. Mus., Biological Survey Coll. Collected April 18, 1898, by E. A. Goldman. Orig. No. 12319.

Distribution.—State of Tamaulipas, Mexico (from Tampico to Victoria).

Characters.—Size of *S. deppei*, to which it is closely related. Above fulvous-olive-gray; below white, often shading to pale buffy posteriorly. Forelegs and shoulders gray; tail rather full, black, washed with white on upper surface. 1 upper premolar.

Color.—Upper parts from nose to base of tail, including upper surface of hind feet, finely grizzled black and pale olivaceous-fulvous, brightest on flanks and thighs. Sides of head and neck dingy grizzled gray and fulvous; ears slightly rufous; an indistinct ring of pale dull fulvous around eyes. Lower surface white, nearly pure on chin, throat and breast, becoming grayer or shaded with buffy posteriorly. Tops of fore feet, forelegs and shoulders gray; inside of legs paler gray; a gray border sometimes extending from forelegs back along flanks and side of hind legs separating grizzled dorsal area from the paler lower surface. Anal region and base of tail all round like back. Upper surface of tail black, washed with white, the pale yellowish-brown basal color showing through; median band on under surface grizzled pale buffy and black, the buffy predominating and bordered by a black band; a thin edging of white around border. Small patch of white and pale buffy fur behind base of ears.

Measurements.—Type specimen: Total length 403; tail vertebræ 195; hind foot 55.

***Sciurus alleni* sp. nov.** Allen's Squirrel.

Type from Monterey, Tamaulipas, Mexico. No. 331331, ♂ ad., U. S. Nat. Mus., Biological Survey Coll. Collected Feb. 22, 1891, by C. P. Streater. Orig. No. 563.

Distribution.—Nuevo Leon and Tamaulipas, Mexico.

Characters.—Size and general appearance much like pale specimens of *Sciurus carolinensis fuliginosus*; forelegs and tops of fore and hind feet grayish white; tail bushy, black, washed with white above. 1 upper premolar.

Color.—Entire upper parts, except upper surface of feet and forelegs, finely grizzled with grayish-white, dark fulvous and black; the fulvous darkest on crown and rump, but differing slightly in shade on rest of upper surface. Sides of body and thighs somewhat grayer than back; forelegs to body and fore and hind feet grayish-white, the hairs having black bases and whitish tips; a small indistinct patch of fulvous sometimes present in middle of gray on upper surface of hind foot. Under surface of body pure white. Eyes surrounded by ring of pale fulvous; ears like top of head except for a pale, dingy-fulvous patch behind base in some specimens. Tail moderately bushy, washed with white on upper surface with black and dark fulvous showing through; below a broad median band of dark fulvous grizzled with black and bordered on sides by a narrow band of black; edged externally with white.

Cranial characters.—The skull of this species is most like that of *S. oculatus*, from which it differs in smaller size, slightly stouter rostrum, and larger foramen ovale.

Measurements.—Type specimen: Total length 466; tail vertebrae 220; hind foot 63. Average of five adults: Total length 475; tail vertebrae 223.8; hind foot 62.6.

Remarks.—The little variation in the series before me appears to be purely individual and is produced by the slightly varying intensity of the fulvous. The series examined consists of winter and spring specimens. Its nearest Mexican relative is *S. oculatus*, from which it is perfectly distinct. In size and color it is most like the form of *Sciurus carolinensis*, found in northern and eastern Texas, but the grayish white feet and absence of second premolar serve to distinguish it at once. The absence of the second premolar throws it with *S. arizonensis* and *S. oculatus*, from which its much smaller size, the grizzled blackish-fulvous upper surface, and grayish white feet distinguish it. The lack of a second premolar and darker and much finer grizzled dorsal surface distinguish it sharply from *S. yucatanensis*.

S. alleni is a well-defined species of the Arid Tropical zone and is restricted to a portion of the Tamaulipan faunal district.

I take pleasure in dedicating this species to Dr. J. A. Allen, Curator of Mammals in the American Museum of Natural History, New York.

***Sciurus oculatus tolucaë* subsp. nov.** Toluca Squirrel.

Type from north slope of Volcano of Toluca, Mexico, Mex. No. 55927, ♂ ad., U. S. Nat. Mus., Biological Survey Coll. Collected Sept. 8, 1893, by E. W. Nelson and E. A. Goldman. Orig. No. 5419.

Distribution.—Pine and fir forests on north slope of Volcano of Toluca, and thence north on adjacent east slope of mountains in State of Mexico

to mountains of central Queretero and Guanajuato, and perhaps reaching the mountains of southwestern San Luis Potosi.

Characters.—A large squirrel, differing from typical *S. oculatus* in not having a black dorsal area and in having tops of feet and entire lower surface whitish or very pale fulvous. 1 upper premolar.

Color.—Similar to *S. oculatus*, but without any definite black area on upper surface and always white or nearly white below. The dorsal surface is darker than the sides, and the fulvous shade, which is barely perceptible on dorsal surface of typical *S. oculatus*, becomes distinct on crown and middle of back. Ear patches uniformly dirty whitish. Tops of feet vary from whitish to pale buffy; ring around eyes dingy whitish with a buffy shade at outer border.

Measurements.—Type specimen: Total length 565; tail vertebrae 266; hind foot 72.

Remarks.—Typical *Sciurus oculatus* Peters, of which *Sciurus melanonotus* Thomas is a synonym, is a common species of the pine forests in the mountains along the eastern border of the Mexican tableland from Mt. Orizaba, Puebla, to eastern San Luis Potosi.

***Sciurus goldmani* sp. nov.** Goldman's Squirrel.

Type from Huehuetan, Chiapas, Mexico. No. 77903, ♂ ad., U. S. Nat. Mus., Biological Survey Coll. Collected Feb. 28, 1896, by E. W. Nelson and E. A. Goldman. Orig. No. 9435.

Distribution.—Pacific Coast lowlands of Guatemala, ranging north to Huehuetan, Chiapas, Mexico.

Characters.—A large slender species with coarse harsh hair, resembling *S. collii*. Upper surface dark iron-gray; lower surface white; ears black rimmed, rufous-tufted, with large white patch behind base; tail long, slender, above black washed with white. 2 upper premolars.

Color.—*Winter pelage* (Huehuetan): Upper surface from nose to base of tail, including flanks, outer side of forelegs and thighs, coarsely grizzled black and pale fulvous gray, the fulvous sometimes becoming intensified to a dull orange-buffy. There is usually a thin black wash over dorsal surface, which becomes decidedly heavier on some specimens, with the pale buffy-yellow showing through. Sides of head a little paler than back; ears dingy grayish on inner side and edged with black; a scanty tuft of dark ferruginous hairs on back of ear and a large, conspicuous patch of white behind base; a small but distinct white spot on side of head just below ear. Tops of toes dingy whitish; tops of feet pale iron gray. Upper surface of tail basally like back, rest black thinly washed with white; below grizzled black and gray, dull fulvous or orange-buffy. Under side of body and inside of legs white. Under fur on back dark plumbeous, on ventral surface white or pale plumbeous.

Measurements.—Type specimen: Total length 520; tail vertebrae 264; hind foot 65. Average of 5 adults: Total length 546.8; tail vertebrae 283.8; hind foot 66.6.

Remarks.—In general appearance this species is very similar to *S. collei*, from which it may be distinguished by the distinct black borders and large basal white patches of the ears; the extension of color of back over outside of legs and thighs and the decidedly white upper surface of feet and toes. The under fur is darker on back, with scarcely a trace of lighter tips, and whiter on belly. The back and sides are the same in *goldmani* but for a little heavier wash of black on middle of back. The most intensely colored specimens are as buffy on dorsal surface as the brightest specimens of *S. collei*, but this added shade of buffy is brightest on nape and ears in *collei* and on the rump of *goldmani*. The ears of *collei* are uniform or differ but little in color, while in *goldmani* the varied markings are strong characters.

This species is named in honor of my field assistant, Mr. E. A. Goldman, to whose faithful aid is due much of the success of our explorations in Mexico.

Sciurus boothiæ managuensis subsp. nov. Managua Squirrel.

Type from Managua River, Guatemala. No. 62476, ♂ ad., U. S. Nat. Mus. Coll. Collected Feb. 12, 1895, by Mrs. C. McElroy.

Distribution.—Managua River, eastern Guatemala.

Characters.—Smaller than typical *S. boothiæ*, with coarse, harsh hairs; blackish yellow on dorsal surface, buffy-yellow below. 2 upper premolars.

Color.—Above, including top of head, outside of legs, flanks and base of tail, grizzled black and dingy fulvous, rather grayish; top of head and back washed with black, the subterminal yellowish showing through; legs usually deeper yellowish, in marked contrast; top of feet shading into grizzled buffy. Sides of nose, cheeks, chin, and sometimes throat, dingy grayish with a dull fulvous shade; rest of lower parts bright buffy-yellow. Ears distinctly margined with black, a conspicuous patch of buffy-yellow fur behind base and a thin tuft of rufous hairs near tip. Tail flattened and rather narrow: above, black washed with white; below, grizzled with grayish-fulvous along middle with a band of black along each side, heaviest at tip and bordered externally with white.

Measurements.—Type specimen: Total length 512.5; tail vertebrae 250.5; hind foot 57.

Remarks.—Among the four specimens examined two agree closely in color with the type, the other, apparently immature, is much grayer above and the color of the back extends down on the legs to the feet, the latter being washed with buffy; below it is dingy-buffy.

Sciurus albipes quercinus subsp. nov. Oak Woods Squirrel.

Type from mountains on west side of Valley of Oaxaca, Oaxaca, Mexico. No. 68202, ♀ ad., U. S. Nat. Mus., Biological Survey Coll. Collected Sept. 15, 1894, by E. W. Nelson and E. A. Goldman. Orig. No. 6768.

Distribution.—The pine and oak forests on mountains along western side of Valley of Oaxaca, Oaxaca, Mexico.

Characters.—Size of *S. albipes*, but differs in having the back grizzled yellowish-gray, and the lower surface white or sometimes pale buffy. 2 upper premolars.

Color.—Very similar to *S. albipes nemoralis* from mountains near Patzcuaro, Michoacan, but differing in paler, more yellowish-white dorsal surface; median band on under side of tail commonly buffy or reddish fulvous, bordered with the usual black band edged externally with white. No melanistic phase.

Measurements.—Type specimen: Total length 550; tail vertebræ 285; hind foot 70. Average of five adults: Total length 545.6; tail vertebræ 274.8; hind foot 69.8.

Remarks.—Some specimens are very close to *S. albipes nemoralis* and have the under side of tail nearly as gray as in that form. The feet and under parts are usually white, varying to buffy or fulvous on one out of every 4 or 5 specimens. This is not a strongly defined race, but the characters given are sufficient to distinguish most specimens without difficulty, and in view of its isolation from its nearest related form it appears worthy of recognition.

***Sciurus albipes nemoralis* subsp. nov.** Michoacan Squirrel.

Type from Patzcuaro, Michoacan, Mexico. No. $\frac{85358}{47823}$, ♂ ad., U. S. Nat. Mus., Biological Survey Coll. Collected July 23, 1892, by E. W. Nelson and E. A. Goldman. Orig. No. 2905.

Distribution.—Sierra Madre, southeast of the Sierra Nevada de Colima, Jalisco, to Volcano of Toluca, State of Mexico (Nahautzin and Patzcuaro, Michoacan and Volcano of Toluca).

Characters.—Size of *S. albipes*, but differs in having back of a clearer iron-gray; lower surface white; under side of tail gray or fulvous-gray. 2 upper premolars.

Color.—Top of nose and crown blackish or dark iron-gray, rest of dorsal surface, including outside of fore and hind legs, grizzled black, gray, or grayish white with an indistinct mixture of dingy fulvous; the fulvous mixture darkest on nape and rump, forming poorly defined patches varying in intensity and sometimes scarcely appreciable; outside of legs and flanks grayer than middle of back; feet white; ears like crown, with conspicuous white patch behind base; eyes surrounded by dull grayish-fulvous ring; cheeks and sides of nose grizzled gray with dingy fulvous shade; lower surface of body white. Base of tail, above like rump, below grizzled gray; rest of upper surface black, heavily washed with white; lower surface with broad median band of grizzled gray or pale fulvous-gray and black, bordered by a band of black and edged externally with white; on some specimens the lower surface of tail is washed with white.

Measurements.—Type specimen: Total length 560; tail vertebræ 295; hind foot 70. Average of 5 adults: Total length 550.6; tail vertebræ 280.6; hind foot 70.

Sciurus albipes colimensis subsp. nov. Colima Squirrel.

Type from the Hacienda Magdalena, Colima, Mexico. No. $\frac{331}{4} \frac{29}{2} \frac{1}{2}$, ♂ ad., U. S. Nat. Mus., Biological Survey Coll. Collected March 19, 1892, by E. W. Nelson and E. A. Goldman. Orig. No. 2239.

Distribution.—Arid tropical forests of Colima, ascending river valleys to Plantinar, Jalisco. Ranging from sea level to 3000 feet.

Characters.—A little smaller, slenderer, and tail narrower than *S. albipes*, from which it differs in having distinct nape and rump patches; rest of back clearer and lighter gray; tops of feet iron-gray; under surface of body white; under surface of tail grizzled iron-gray. 2 upper premolars.

Color.—Upper surface, including tops of fore and hind feet, excepting nape and rump patches, grizzled white or gray and black with a scanty intermixture of rusty or buffy-rufous. Under fur tipped with gray or fulvous according to color on longer hairs. Nose and fore part of crown usually blacker than back; ears similar to nape with patch of dingy white behind base; eyes surrounded with dingy whitish ring; side of nose and cheek to behind eyes gray, sometimes tinged with buffy on cheeks. Tops of feet vary from dark iron-gray to grayish white. Nape and rump patches generally very distinct, and vary from dark rufous to bright rusty-red or dark reddish-buffy, and sometimes dull fulvous. Lower surface of body white. Anal region and base of tail below like middle of back; top of tail at base like rump patch; rest of upper surface of tail black heavily washed with white; below a grizzled iron-gray median band narrowly bordered by band of black and edged externally with grayish white. Tail rather narrow.

Measurements.—Type specimen: Total length 525; tail vertebræ 260; hind foot 65. Average of 5 adults: Total length 522; tail vertebræ 267; hind foot 67.6.

Sciurus albipes effugius subsp. nov. Guerrero Squirrel.

Type from mountain near Chilpancingo, Guerrero, Mexico. No. 70288, ♀ ad., U. S. Nat. Mus., Biological Survey Coll. Collected Dec. 24, 1894, by E. W. Nelson and E. A. Goldman. Orig. No. 7271.

Distribution.—High pine region of the Cordillera del Sur, near Chilpancingo, Guerrero, Mexico.

Characters.—Size of *S. albipes*, from which it differs in the strongly marked nape patch, unusually large, conspicuous patches of white behind base of ear and rich rufous color on under side of tail. 2 upper premolars.

Color.—*Winter pelage:* Upper surface from nose to base of tail, excepting nape patch and tops of fore and hind feet, grizzled grayish white, black, and rufous, the latter color usually obscured by the overlying grayish. Top of head and nape occupied by a well-marked patch of dark rufous, almost chestnut, washed with black; nape patch shading into a duller colored area extending below eyes on sides of head and neck and surrounding ears; rump patch absent or reduced to small area at base of

tail, same color as nape. Ears grizzled grayish or dull rusty rufous on inner side; behind rufous or rusty gray anteriorly, posteriorly covered with long white fur, forming part of the conspicuous white patch behind base. Eyes surrounded by rings of fulvous and whitish; sides of nose and lower part of cheeks gray, varying in intensity. Tops of fore and hind feet white, shading through gray on legs to color of body. Anal region and base of tail all round like adjacent part of rump. Upper surface of tail black, washed with white, the bright rufous basal color sometimes showing through; below a median band of deep, rich rufous with scarcely a trace of dark grizzling, but bordered on each side by narrow band of black, edged with white. Chin white; sides of throat sometimes shaded with same; anal region gray; rest of lower parts deep rich rufous, very uniform in the series before me.

Measurements.—Type specimen: Total length 502; tail vertebræ 247; hind foot 68. Average of 5 adults: Total length 496.8; tail vertebræ 249; hind foot 68.

Remarks.—An old female in worn fur taken with the other specimens the last of December may represent the summer pelage. The rump patch is as conspicuous as the nape patch and agrees with it in color. The tops of fore and hind feet are dark gray; inside of legs dingy whitish shading into the dull whitish-rufous that covers throat, breast, and abdomen except ring of white around mammæ; chin white. The lower surface of tail is darker rufous than body and distinctly grizzled with black. Top of nose and area between nape and rump patches grizzled gray, black, and rusty rufous, the gray most conspicuous.

Among five adult winter specimens in the perfect pelage described above one is darker than the others on dorsal surface, owing to an increase in amount of black on tips of hairs. Another specimen has the rufous of under surface extending up on sides behind fore legs and uniting with a backward extension of the nuchal patch much like *S. aureogaster*. The rest of dorsal surface is less heavily grizzled with gray than usual and rusty-red predominates, so that the prevailing shade is dull rusty-red thinly grizzled with grayish white. The white on tops of feet is washed with reddish. Two half-grown young taken the last of December are in the same pelage as the adults, agreeing with the average adults except in having only the toes white and rest of feet gray. The nearest ally of this subspecies appears to be typical *S. albipes*. The white ear patches are more conspicuous than in any Mexican squirrel known to me.

***Sciurus nelsoni hirtus* subsp. nov.** Popocatepetl Squirrel.

Type from Tochimilco, Puebla, Mexico. No. 55325, ♂ ad., U. S. Nat. Mus., Biological Survey Coll. Collected Aug. 7, 1893, by E. W. Nelson and E. A. Goldman. Orig. No. 5295.

Distribution.—Volcanoes of Iztaccihuatl and Popocatepetl, in States of Mexico and Puebla, Mexico.

Characters.—Size of *S. nelsoni*, but distinguished by distinct patches of dingy fulvous on nape and rump; by iron-gray color on middle of back

and dingy rufous on under side of body. Ears and feet dark iron-gray. 2 upper premolars.

Color.—Dorsal surface from nose to base of tail, including tops of fore and hind feet, excepting nape and rump patches, finely grizzled with black and gray, the latter obscurely mixed with dull fulvous; gray of crown, nape, and rump mostly replaced by fulvous, thus producing distinct patches of dull dingy fulvous grizzled with black. Ears like nuchal area, with distinct patch of white fur behind base; chin dingy gray. Lower surface, including inside of forelegs and thighs, dark dingy rufous. Upper surface of tail black heavily washed with white; median band on lower surface varying from grizzled black and pale fulvous gray to black and rich buffy-fulvous; with a heavy band of black on each side edged externally with white. The tail has a remarkably broad full brush.

Measurements.—Type specimen: Total length 498; tail vertebræ 243; hind foot 67. Average of five adults: Total length 514.2; tail vertebræ 256.8; hind foot 68.

***Sciurus aureogaster frumentor* subsp. nov. Perote Squirrel.**

Type from Las Vigas, Vera Cruz, Mexico. No 54259, ♂ ad., U. S. Nat. Mus., Biological Survey Coll. Collected June 18, 1893, by E. W. Nelson and E. A. Goldman. Orig. No. 5073.

Distribution.—East slope of Cofre de Perote, Vera Cruz, Mexico, from near Las Vigas (7500 ft.) to Jico and Jalapa (4400 ft.).

Characters.—Size of *S. aureogaster*, from which typical specimens differ in having very distinct rufous patches on nape and rump, and grizzled gray lower surface. 2 upper premolars.

Color.—*Summer pelage* (Las Vigas): Top of nose and fore part of crown grizzled black and gray, sometimes slightly mixed with fulvous; nape and rump patches large and conspicuous, varying from dark orange-buffy to dark ferruginous; rest of back and sides, including tops of feet and legs, grizzled black and gray, or black, gray, and orange-buffy, the gray overlying the other colors. Tops of feet darker than back and usually blackish, thinly grizzled with gray. Ears generally like nape patch, but often grizzled with gray and sometimes with a whitish tuft behind base; narrow ring of dingy buffy round eye. Side of head between eye and ear, up to border of nape patch in front of ear, dark, dingy orange-buffy. Lower surface dingy grizzled black and gray nearly as on back, but paler on chin, lower cheeks, throat, and breast. Base of tail all round like rump. Upper surface of tail black, washed with white; below with a dark rufous median band broadly bordered on each side by black and edged externally with white.

Measurements.—Type specimen: Total length 500; tail vertebræ 253; hind foot 69. Average of 5 adults: Total length 504.6; tail vertebræ 249.8; hind foot 68.6.

Remarks.—*Winter pelage*: Two specimens taken in April at Jalapa are in winter pelage and differ from the large series of summer skins taken at Las Vigas and Jico in the greater amount of gray on the dorsal surface.

This overlies and obscures the nape and rump patches; the feet also are grayer. The under surface varies from grizzled gray to gray washed with dull rufous, and in two summer specimens from Las Vigas is dingy ferruginous. In the series of 25 specimens from Jico and Jalapa only two are distinctly gray below and three are dingy reddish, washed with grayish. All of the others are intense ferruginous, which in some specimens extends up on sides, behind the forelegs, almost as in true *aureogaster*. The nape and rump patches, while averaging less uniformly distinct than in Las Vigas specimens, are almost invariably strongly marked and separate these specimens from true *aureogaster*. There is a tendency for the gray to extend over the nape and rump and so obscure these patches. The base and upper part of the tail is as in Las Vigas specimens; below the black lateral bands are broader and often reduce the rufous central stripe to a narrow streak on basal half. The rufous on tail is deeper than in Las Vigas specimens, varying from deep orange rufous to ferruginous. These specimens are intergrades between *frumentor* and true *aureogaster*, but the presence of distinct rump patches places them nearest *frumentor*. No melanistic phase is known.

Sciurus socialis cocos subsp. nov. Acapulco Squirrel.

Type from Acapulco, Guerrero, Mexico. No. 70644, ♂ ad., U. S. Nat. Mus., Biological Survey Coll. Collected Jan. 11, 1895, by E. W. Nelson and E. A. Goldman. Orig. No. 7360.

Distribution.—Pacific Coast district of Guerrero and adjacent part of Oaxaca (from Acapulco to Jamiltepec), Mexico.

Characters.—Distinguished from all Mexican squirrels by the sharp contrast between the bright rufous patches on nape and rump and the unusually pale or whitish color on rest of dorsal surface. 2 upper premolars.

Color.—Upper parts from nose to base of tail, except feet and patches on nape and rump, grizzled grayish-white, sometimes with slight mixture of rufous; darkest on nose and fore part of crown; on back and flanks, between the nape and rump patches, often almost white, contrasting strikingly with sharply defined patches on nape and rump, which vary from dark almost chestnut-rufous to deep orange-buffy, washed lightly with black. Eyes surrounded by dull fulvous ring in the middle of a fulvous or reddish-brown area which extends back on sides of head to ears and joins rufous nuchal patch on crown just in front of ears. Ears like nuchal patch, with a small patch of rufous or buffy fur behind base. Sides of nose and lower parts of cheeks grayish-white, this color often extending up to lower border of ears and back along sides of neck. Tops of feet white or pale grayish-white; chin white; rest of lower parts varying from white to pale creamy-buffy or rich buffy-rufous. Base of tail above like rump patch; below with anal region like middle of back; rest of tail on upper surface black, heavily washed with white with the rufous or orange-red under color showing through; below the median band varies from deep rufous to orange-rufous with a narrow black border edged externally and often more or less overlaid with white; sometimes

heavily washed with white below and above. The amount of white on tail agrees with purity of white on dorsal surface.

Measurements.—Type specimen: Total length 506; tail vertebræ 261; hind foot 67. Average of 5 adults: Total length, 515.4; tail vertebræ 263.2; hind foot, 67.

Remarks.—The most common or typical forms of this extremely variable squirrel are described above. They are notable among all of the species and races of the group having nape and rump patches for the sharp contrast between the rich dark color of these patches and the whitish or whitish-gray color on rest of upper surface which brings them out in sharp relief.